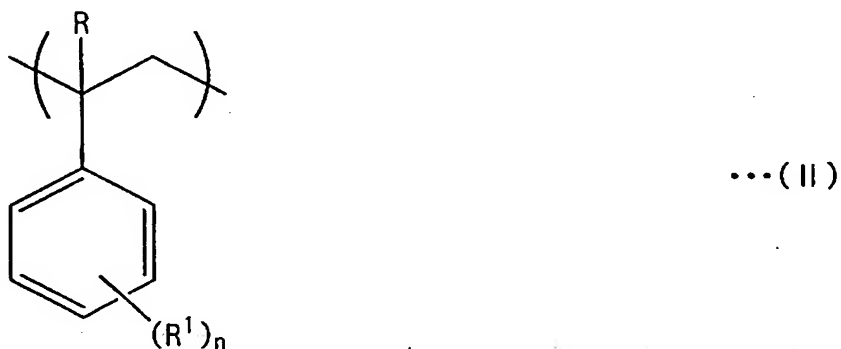


CLAIMS

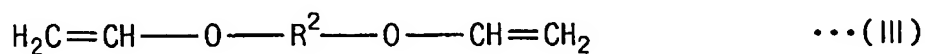
1. A chemical amplification type positive photoresist composition comprising (A) an alkali soluble resin comprising a constituent unit (a1) represented by the following general formula (I):



wherein R represents a hydrogen atom or a methyl group, and a constituent unit (a2) represented by the following general formula (II):

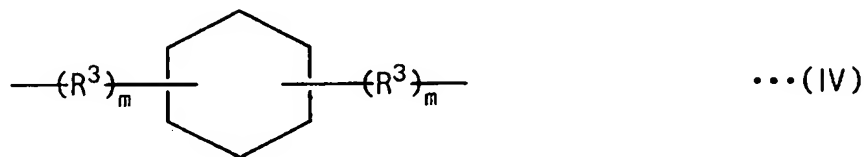


wherein R represents a hydrogen atom or a methyl group, R¹ represents an alkyl group having 1 to 5 carbon atoms and n represents an integer of 0 or 1 to 3; (B) a compound represented by the following general formula (III):



wherein R² represents either an alkylene group having 1 to 10 carbon atoms which may

have a substituent, or a group represented by the following general formula (IV):



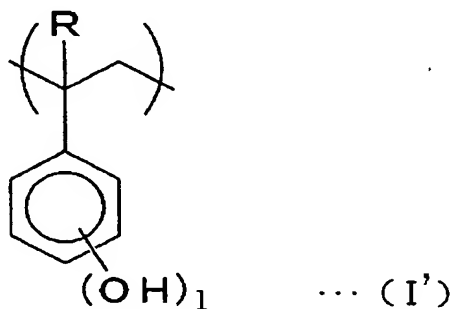
(wherein R^3 represents an alkylene group having 1 to 10 carbon atoms which may have a substituent, and m represents 0 or 1), and the alkylene group may have an oxygen bond (ether bond) in the main chain; (C) a compound generating an acid component under irradiation with radiation; and an organic solvent.

2. The chemical amplification type positive photoresist composition according to claim 1, wherein the component (A) comprises the constituent unit (a1) and the constituent unit (a2).
3. The chemical amplification type positive photoresist composition according to claim 2, wherein the content of the constituent unit (a2) in the component (A) is from 1 to 20 mol%.
4. The chemical amplification type positive photoresist composition according to claim 1, wherein the component (C) is a compound generating an acid component under irradiation with i-rays (365 nm).
5. The chemical amplification type positive photoresist composition according to claim 1, which further comprises a basic compound (D) in the amount of 0.01 to 5 parts by weight based on 100 parts by weight of the component (A).
6. A method for formation of a resist pattern, which comprises the steps of applying the positive photoresist composition of claim 1 on a substrate and subjecting to a heat

treatment to form a resist layer having a film thickness of 1.5 to 7.0 μm ; performing selective exposure; performing PEB (post exposure bake); and performing a development treatment with an aqueous alkali solution to form a resist pattern.

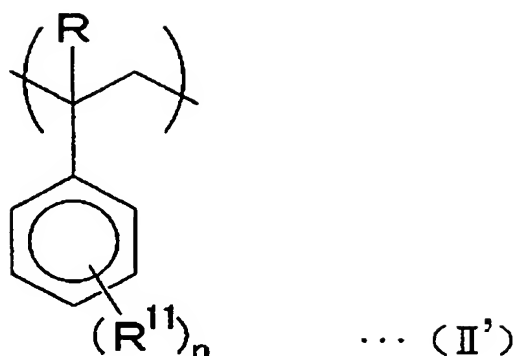
7. A chemical amplification type positive photoresist composition comprising (A') an alkali soluble resin, (B') a photo acid generator generating an acid under irradiation with radiation, and (C') a crosslinking polyvinyl ether compound, wherein

the component (A') comprises a unit (a1') derived from (α -methyl)hydroxystyrene represented by the following general formula (I'):



wherein R represents a hydrogen atom or a methyl group and l represents an integer of 1 to 3, and an alkali-insoluble unit (a2') having no acid dissociable dissolution inhibiting group, and wherein a dissolution rate to an aqueous 2.38 wt% TMAH (tetramethylammonium hydroxide) solution of the component (A') is from 10 to 100 nm/second.

8. The chemical amplification type positive photoresist composition according to claim 7, wherein the constituent unit (a2') is a unit derived from (α -methyl)styrene represented by the following general formula (II'):



wherein R represents a hydrogen atom or a methyl group, R^{11} represents an alkyl group having 1 to 5 carbon atoms and n represents an integer of 0 or 1 to 3.

9. The chemical amplification type positive photoresist composition according to claim 7, wherein the content of constituent unit (a2') in the component (A') is from 5 to 35 mol%.
10. The chemical amplification type positive photoresist composition according to claim 7, wherein the weight-average molecular weight of the component (A') is from 1500 to 30000.
11. The chemical amplification type positive photoresist composition according to claim 7, wherein the component (B') is a photo acid generator having a decomposition point of 120°C or higher.
12. The chemical amplification type positive photoresist composition according to claim 11, wherein the component (B') is a poly(bissulfonyl)diazomethane photo acid generator.
13. The chemical amplification type positive photoresist composition according to claim 7, which further comprises a nitrogen-containing organic compound (D).

14. A method for formation of a resist pattern, which comprises the steps of applying the positive photoresist composition of claim 7 on a substrate and subjecting to prebaking; performing selective exposure; performing PEB (post exposure bake); and performing a development treatment with an aqueous alkali solution to form a resist pattern.